



Serial No. 09/512,411

**IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE**

**Patent Application**

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**Case:** 3-2-2

**Serial No.:** 09/512,411

**Group Art Unit:** 2144

**Filed:** February 24, 2000

**Examiner:** Thanh T. Nguyen

**Title:** MOBILE IP SUPPORTING QUALITY OF SERVICE

**MAIL STOP: APPEAL BRIEF-PATENTS**

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**SIR:**

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**APPEAL BRIEF UNDER 37 C.F.R. 41.37**

**i) Real party-in-interest**

The real party-in-interest is Alcatel-Lucent USA Inc., 600 Mountain Ave., Murray Hill, NJ 07974-0636, i.e., the owner of the entire interest in the application-at-issue.

**ii) Related appeals and interferences**

Appellants do not know of any prior or pending Appeals, Interferences, or Judicial Proceedings directly related to, directly affecting, directly affected by, or have a bearing on the Board's decision in this Appeal.

**iii) Status of Claims**

Claims 1-8, 10, 11, and 16-21 are rejected, and claims 9 and 12-15 are cancelled.

Herein, the rejections of claims 1-8, 10, 11, and 16-21 are appealed.

At page 2, the Office Action of July 24, 2008 (Hereafter, referred to as the Office Action.) states:

"PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below."

At pages 2 – 13, the Office Action states claim rejections, which are assumed to include all pending claim rejections. See 37 C.F.R. §§ 1.113(b), 1.104; M.P.E.P. § 706.07.

**iv) Status of Amendments**

No amendments have been made in response to the Office Action and no amendments are pending.

**v) Summary of Claimed Subject Matter**

For ease of reference, non-limiting reference numerals, Figures, and text citations are mentioned below. The reference numerals, Figures, and text citations relate to exemplary features.

Independent claim 1 relates to a method of establishing a session between a correspondent node (10) and a mobile node (8), the mobile node (8) having a home address in a home network (2) and being temporarily connected at a care-of address in a foreign network (6) (See e.g., Figs. 7 and 8 and page 18, lines 8 – 17).

The session is a quality of service session between the correspondent node and the mobile node (See e.g., page 18, lines 8 – 17). The method includes the step of generating (160, 162), in the foreign network, a modified reply message (79, see Fig. 6 (d)) of an Internet Protocol packet having a source address (115) of the mobile node's care-of address in place of the mobile node's home address (114) and having a destination address (117) of the correspondent node (See e.g., page 19, line 15, to page 20, line 4). The method also comprises the step of transmitting (162) the modified reply message (See e.g., page 19, lines 22 – 25).

Independent claim 16 relates to a system (See e.g., Fig. 7). The system is configured to support a session (page 18, lines 15 - 17). The system comprises a correspondent node (10), a mobile node (8) having a home address in a home network (2) and being temporarily connected at a care-of address in a foreign network (6), and a proxy device (144), in the foreign network (See e.g., page 17, lines 1 – 21; page 19, line 11, to page 20, line 4). The proxy device (144) is associated with the mobile node (8) for generating a modified reply message (79, see Fig. 6 (d)) of an Internet Protocol packet having a source address (115) of the mobile node's care-of address in place of the mobile

node's home address (114) and having a destination address (117) of the correspondent node (See e.g., page 19, line 11, to page 20, line 4). The session is a quality of service session between the correspondent node and the mobile node (See e.g., page 18, lines 8 – 17).

**vi) Grounds of rejection to be reviewed on appeal**

A) Whether claims 1 – 2, 5 – 8, 10, and 21 are obvious over the combination of Turunen (i.e., U.S. Patent 6,477,644), Suarez (i.e., U.S. Patent 5,790,789), and Patel (i.e., U.S. Patent 6,850,764) as applied by the Office Action at pages 3 – 8 and 10 – 11.

B) Whether claims 16 – 18 and 20 are obvious over the combination of Turunen, Suarez, and Patel as applied by the Office Action at pages 3 and 8 – 10.

C) Whether claims 3 – 4 and 11 are obvious over Turunen, Suarez, Patel, and Kidder (i.e., U.S. Patent 5,903,735) as applied by the Office Action at pages 11 – 13.

D) Whether claim 19 is obvious over Turunen, Suarez, Patel, and Kidder as applied by the Office Action at pages 11 – 13.

**vii) Argument**

**(A) In Grounds of Rejection (A), the obviousness rejections of claims 1, 2, 5 – 8, 10, and 21 over Turunen, Suarez, and Patel are improper.**

**Claim 1**

**1) The obviousness rejection is improper, because it relies on Turunen to teach features that are not taught in the cited parts of Turunen.**

At page 3, numbered section 5, the Office Action states that it relies on Turunen to teach the generating step recited in pending claim 1. In particular, the Office Action cites col. 2, lines 23 – 35 and col. 6, lines 20 – 50, of Turunen as teaching said step. The generating step of pending claim 1 states:

generating, in the foreign network, a modified reply message of an Internet Protocol packet having a source address of the mobile node's care-of address in place of the mobile node's home address and having a destination address of the correspondent node; ...

In contrast, the above-cited parts of Turunen state:

indicated by reference numeral 1 in FIG. 2). When the mobile host leaves its home network and contacts a foreign network (FN), the host is registered with a foreign

agent (FA) of that network. The foreign agent then transmits to the mobile host an internet address of the foreign agent, and the mobile host in turn transmits the received internet address to the home network's home agent, together with a registration instruction. The home agent registers the new status of the mobile host and records the newly allocated internet address as a "care-of-address" for the host. Whenever the mobile host registers with a new foreign network, a new care-of-address is sent to the home network's home agent to replace the previously registered care-of-address.

Turunen, col. 2, lines 23-35.

Whilst new datagrams will be directed to the mobile host 9 at the new internet address, some datagrams initiated using the old address in the corporate LAN 3 may still be in transit. A registration message is therefore transmitted, over the internet 5, from the mobile host 9 to the corporate LAN's home agent to register the mobile host's new internet address with the home agent (either as a care-of-address or as a co-located care-of-address). As the internet 5 is an inherently unsecure transmission medium, the registration request and the care-of-address are supplemented, at the mobile host 9, with "authentication" data. This is data generated by a second signal processing unit 15 of the mobile host using a hash function applied to the received authentication key and the actual message data, i.e.  $\text{authentication\_data} = \text{hash\_function}(\text{authentication\_key}, \text{message\_data})$ . A typical hash function is that known as MD5. Given that the home network's home agent knows the authentication key used by the mobile host 9, the home agent can authenticate the mobile host 9 using the authentication key, and the received message and authentication data.

If the corporate LAN 3 subsequently receives datagrams destined for the mobile host 9, the corporate LAN's home agent determines that the mobile host 9 is now registered with a foreign network and it redirects the datagrams to the care-of-address or co-located care-of-address now registered for the mobile host 9. The GSM network's home agent receives these forwarded datagrams and redirects them to the mobile host 9, either directly or via a foreign agent in a hot spot LAN. This redirection route is indicated in FIG. 3 by reference numeral 4.

Turunen, col. 6, lines 20-50 (underlining added).

Whereas, at page 3, numbered section 5, the Office Action seems to indicate that the above-cited parts of Turunen disclose:

generating, in the foreign network, a modified reply message ...,

i.e., as in pending claim 1, the above-cited parts of Turunen instead disclose:

generating, in the home network, a message ....

This difference between the above cited part of Turunen and the generating step of pending claim 1 is clearly indicated by the underlined text in the above-cited part of

Turunen, because the LAN 3 is the home network of the mobile host 9 in Turunen. Indeed, Turunen also states:

If a mobile host has an active internet connection when it passes from ... to a foreign network, and a datagram destined for the host subsequently arrives at the home network, the home agent determines that the mobile host is registered with a foreign agent and forwards the datagrams to the registered care-of-address.

Turunen, col. 2, lines 38 – 44 (underlining added).

That is, in Turunen, the home agent of the home network is generating and forwarding datagrams to the care-of-address rather than an entity in the foreign network as recited in pending claim 1. In addition, the modified message disclosed by Turunen has a modified destination address, i.e., a care-of-address, rather than a modified source address, i.e., a care-of-address, as recited in the generating step of pending claim 1. Thus, the cited portion of Turunen differs from pending claim 1, at least, by disclosing a generating step in the home network rather than the foreign network and by disclosing a message that has a modified destination address rather than a modified source address.

Due to the above-described deficiencies, the Office Action does not cite prior art teachings for each feature in the generating step of pending claim 1. For that reason, the rejection of pending claim 1 is improper.

**2) The obviousness rejection is improper, because it makes an improper combination of Turunen and Suarez.**

The Office Action relies on a combination of Turunen, Suarez, and Patel. To motivate the combination of Turunen and Suarez, the Examiner states:

In the same field of endeavor, Suarez discloses (e.g., method and architecture for the creation, control and deployment of services within a distributed computer environment).

Office Action, page 3, numbered section 6 (underlining added).

Whereas the title of Suarez is:

“Method And Architecture For The Creation, Control, And Deployment Of Services Within A Distributed Computer Environment”,

the title of Turunen is:

“Mobile Internet Access”.

A skilled person would NOT search the art for “distributed computing”, e.g., Suarez, when trying to solve the very different problems in wireless access or mobile access

technologies as in Turunen. Similarly, the Abstract of Turunen, which describes problems related to network access for roaming of wireless or mobile devices, and the Abstract of Suarez, which describes problems related to distributed computing, would not have motivated a person of skill in the art to search teachings of Suarez about distributed computing to cure problems in mobile access apparatus and methods of Turunen. Indeed, the need for the Office Action to combine Suarez and Turunen, which relate to such different technologies as “distributed computing” and “mobile Internet access”, to find prior art teachings for some recited features in pending claim 1 indicates that pending claim 1 is non-obvious.

**3) The obviousness rejection is improper, because Suarez does not disclose a modified message of the type in pending claim 1.**

Whereas at page 3, numbered section 6, the Office Action states that column 26, lines 40 – 67, of Suarez teaches transmitting a modified message, i.e. as in pending claim 1, the message of Suarez is not the type of modified reply message recited in pending claim 1. In particular, pending claim 1 recites a modified reply message of an Internet Protocol packet whose source address is a care-of address rather than a home address of a mobile node. Nothing in the above cited portion of Suarez discloses transmitting such a type of message. That is, column 26, lines 40 – 67, of Suarez do not teach a modified reply message of an Internet Protocol packet whose source address is the mobile node’s care-of address rather than the mobile node’s home address. Instead, the cited portion of Suarez and related Fig. 11 disclose directing messages to or from services via agents including Bus agents in a distributed computing system.

**4) At page 4, section 7, the Office Action lists illusory motivations for modifying Turunen by teachings of Suarez.**

At page 4, lines 1 – 6, the Office Action also states that it would have been obvious to combine Suarez’s disclosure on “a distributed computer environment” with the disclosure of Turunen (i.e., on Mobile Internet Access):

for the purpose of reducing network traffic, reducing distribution complexities, and [to] support alternative language systems [see col.6, lines 7-9].

The above-listed reasons provide, at best, illusory motivations to modify Turunen with the teachings of Suarez. For example, there is no reason to expect that any techniques of

reducing “network traffic” or “distribution complexities” in a “distributed computing environments”, as disclosed by Suarez, would be helpful in “reducing traffic or distribution complexities” in the very different “mobile access environments” of Turunen. Also, there is no suggestion of any desire to support “alternative language systems” in the cited parts of Turunen even though such support may be advantageous in the very different “distributed computing environments” of Suarez. Thus, the above-listed reasons for modifying Turunen with the teachings of Suarez, as stated in the Office Action, do not provide the required rational reasoning element of a proper obviousness rejection.

Claims 2, 5 – 8, 10, and 21

Claims 2, 5 – 8, 10, and 21 are non-obvious over the above combination of art, as applied by the Final Office Action, at least, by their dependence on independent claim 1.

**(B) In Grounds of Rejection (B), the obviousness rejections of claims 16 – 18 and 20 over Turunen, Suarez, and Patel are improper.**

Claim 16

**1) The obviousness rejection is improper, because it relies on Turunen to teach features that are not taught in the cited parts of Turunen.**

At pages 8 – 9, numbered section 20, the Office Action states that it relies on Turunen to teach the proxy device of pending claim 16. In particular, the Office Action cites col. 6, lines 41 – 52, of Turunen to teach said proxy device. With respect to the proxy device, pending claim 16 states:

a proxy device, in the foreign network, the proxy device associated with the mobile node for generating a modified reply message of an Internet Protocol packet having a source address of the mobile node’s care-of address in place of the mobile node’s home address and having a destination address of the correspondent node, ...

(underlining added)

In contrast, the above-cited part of Turunen states:

If the corporate LAN 3 subsequently receives datagrams destined for the mobile host 9, the corporate LAN's home agent determines that the mobile host 9 is now registered with a foreign network and it redirects the datagrams to the care-of-address or co-located care-of-address now registered for the mobile host 9. The GSM network's home agent receives these forwarded datagrams and redirects them to the mobile host 9, either directly or via a foreign agent in a hot spot LAN. This redirection route is indicated in FIG. 3 by reference numeral 4.

When the mobile host 9 moves between different "sub-networks" of the cellular telephone network, e.g. from the ...  
Turunen, col. 6, lines 41-52 (underlining added).

Whereas the Office Action, numbered section 20, states that the above-cited part of Turunen discloses:

a proxy device, in the foreign network, ...,

as in pending claim 16, the above-cited part of Turunen instead discloses:

a device, in the home network, ....

That is, the LAN's home agent is an agent in LAN 3, which is the home network of the mobile host 9. Indeed, this difference between the cited part of Turunen and the recited proxy device in pending claim 16 is clearly indicated in the underlined parts of the above citation from Turunen. Also, Turunen states:

If a mobile host has an active internet connection when it passes ... to a foreign network, and a datagram destined for the host subsequently arrives at the home network, the home agent determines that the mobile host is registered with a foreign agent and forwards the datagrams to the registered care-of-address.

Turunen, col. 2, lines 38 – 44 (underlining added).

That is, the device of Turunen is an agent in the home network of the host, and Turunen discloses that this agent, in the home network, forwards datagrams to the care-of-address rather than a [proxy] device in a foreign network as in pending claim 16. In addition, the proxy device of pending claim 16 is configured "for generating a modified reply message" that is different from the type of message that the home agent of Turunen is configured for generating. That is, the proxy device of pending claim 16 is configured for generating a message with a modified source address, i.e., a care-of-address, rather than a modified destination address, i.e., a care-of-address, as in the messages generated by the above-discussed home agent of Turunen. Thus, the cited part of Turunen differs from pending claim 16 by disclosing a device/agent in the home network rather than in the foreign network and by disclosed that the device/agent is configured to generate a message with a modified destination address rather than a modified source address as in messages generated by the proxy agent of pending claim 16.



Due to the above-described deficiencies, the Office Action does not cite prior art teachings for the proxy agent as recited in pending claim 16. For that reason, the rejection of pending claim 16 is improper.

**2) The obviousness rejection is improper, because it makes an improper combination of Turunen and Suarez.**

The Office Action relies on a combination of Turunen, Suarez, and Patel. To motivate the combination of Turunen and Suarez, the Office Action states:

In the same field of endeavor, Suarez discloses (e.g., method and architecture for the creation, control and deployment of services within a distributed computer environment).

Office Action, page 9, numbered section 21 (underlining added).

Whereas the title of Suarez is:

“Method And Architecture For The Creation, Control, And Deployment Of Services Within A Distributed Computer Environment”,

the title of Turunen is:

“Mobile Internet Access”.

A skilled person would NOT search the art for “distributed computing”, e.g., Suarez, when trying to solve the very different problems in wireless access or mobile access technologies of Turunen. Similarly, the Abstract of Turunen, which describes problems related to network access for roaming of wireless or mobile devices, and the Abstract of Suarez, which describes problems related to distributed computing, would not have motivated a person of skill in the art to search teachings of Suarez to cure problems in the mobile access apparatus and methods of Turunen. Indeed, the need for the Office Action to combine Suarez and Turunen, which relate to such different technologies as “distributed computing” and “mobile Internet access”, to find teachings for some recited features in pending claim 16 indicates that pending claim 16 is non-obvious.

**3) The obviousness rejection is improper, because Suarez does not disclose a modified message of the type in pending claim 16.**

Whereas page 9, numbered section 21 of the Office Action seems to state that Suarez teaches a modified message at column 26, lines 40 – 67, the message of Suarez is not the type of modified reply message recited in pending claim 16. In particular, pending claim 16 recites that the proxy device is configured for generating a modified

reply message of an Internet Protocol packet whose source address is a care-of address rather than a home address of a mobile node. Nothing in the above-cited portion of Suarez discloses such a type of message. That is, column 26, lines 40 – 67, of Suarez do not teach a modified reply message of an Internet Protocol packet having a source address of the mobile node's care-of address rather than the mobile node's home address .... Instead, the cited part of Suarez and related Fig. 11 thereof disclose messages to or from services via agents including Bus agents in a distributed computing system.

**4) At page 9, subsection 21, the Office Action lists illusory motivations for modifying Turunen by teachings of Suarez.**

At page 9, numbered section 21, the Office Action also states that it would have been obvious to combine teachings of Suarez on “a distributed computer environment” with those of Turunen about mobile access:

for the purpose of reducing network traffic, reducing distribution complexities, and [to] support alternative language systems [see col.6, lines 7-9].

The above-cited reasons provide, at best, illusory motivations to modify Turunen with the teachings of Suarez. For example, there is no reason to expect that methods of reducing network traffic in “distributed computing environment” and/or “reducing distribution complexities” in such an environment, as described by Suarez, would be helpful in “reducing traffic” in the very different environment of “mobile access networks” as in Turunen. Also, there is no suggestion of any desire to support “alternative language systems” in the cited parts of Turunen even though such support may be advantageous in the very different “distributed computing environments” of Suarez. The above-recited reasons for modifying Turunen with the teachings of Suarez do not provide the required rational reasons needed to properly combine prior art in an obviousness rejection.

**Claims 17 – 18 and 20**

Claims 17 – 18 and 20 are non-obvious over the above combination, as applied by the Office Action, at least, by their dependence on independent claim 16.

**(C) In Grounds of Rejection (C), the obviousness rejections, at pages 11 – 13, of claims 3 – 4 and 11 over Turunen, Suarez, Patel, and Kidder are improper.**

Claims 3 – 4 and 11 are non-obvious over the combination of references, as applied by the Office Action, at least, by their dependence on independent claim 1.

**(D) In Grounds of Rejection (D), the obviousness rejection, at pages 11 – 13, of claim 19 over Turunen, Suarez, Patel, and Kidder is improper.**

Claims 19 is non-obvious over the combination of references, as applied by the Office Action, at least, by its dependence on independent claim 16.

**Conclusion**

For the above reasons, allowance of all the claims presently in the application is respectfully requested, as is passage to issuance of the present application.

Respectfully submitted,



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**viii) Claims appendix**

1. **(Previously Presented)** A method of establishing a session between a correspondent node and a mobile node, the mobile node having a home address in a home network and being temporarily connected at a care-of address in a foreign network, the session being a quality of service session between the correspondent node and the mobile node,

the method comprising the steps of:

generating, in the foreign network, a modified reply message of an Internet Protocol packet having a source address of the mobile node's care-of address in place of the mobile node's home address and having a destination address of the correspondent node; and

transmitting the modified reply message.

2. **(Original)** The method of claim 1, further comprising the steps of:

receiving, in the home network, a request message having a source address of the correspondent node and a destination address of the mobile node's home address;

creating a modified request message by replacing the destination address of the request message with the mobile node's care-of address; and

transmitting the modified request message to the foreign network, whereby the modified reply message is generated responsive to the modified request message.

3. **(Original)** The method of claim 2,

wherein the step of generating the modified reply message is carried out by proxy device in the foreign network, the proxy device being associated with the mobile node; and

further comprising the steps of:

responsive to receipt of the modified request message at the proxy device, sending a quality of service indication signal to the mobile node, whereby the modified reply message is generated responsive to receipt of a quality of service acknowledgement from the mobile node.

4. **(Original)** The method of claim 2, wherein  
the quality of service session is an RSVP session;  
the request message is a Path message; and  
the modified reply message is a Reservation message.
5. **(Original)** The method of claim 1, further comprising the steps of:  
receiving, in the home network, the modified reply message;  
creating a further modified reply message by replacing the source address with the  
mobile node's home address; and  
transmitting the further modified reply message.
6. **(Original)** The method of claim 5, wherein the correspondent node generates  
the request message and receives the further modified reply message.
7. **(Original)** The method of claim 5, wherein:  
the correspondent node is associated with a correspondent proxy device, whereby:  
the correspondent proxy device generates the request message responsive to a  
quality of service request from the correspondent node; and  
the correspondent proxy device generates a quality of service confirmation  
responsive to receipt of the further modified reply message.
8. **(Original)** The method of claim 1, wherein the step of generating the  
modified reply message is carried out in the mobile node.
9. **(Canceled)**
10. **(Original)** The method of claim 1, in which the step of generating the  
modified reply message is carried out by a proxy device in the foreign network, the proxy  
device being associated with the mobile node.

11. **(Original)** The method of claim 1, wherein  
the quality of service session is an RSVP session; and  
the modified reply message is a Reservation message.

12 – 15 **(Canceled)**

16. **(Previously Presented)** A system configured to support a session,  
comprising:  
a correspondent node;  
a mobile node having a home address in a home network and being temporarily  
connected at a care-of address in a foreign network,  
a proxy device, in the foreign network, the proxy device associated with the  
mobile node for generating a modified reply message of an Internet Protocol packet  
having a source address of the mobile node's care-of address in place of the mobile  
node's home address and having a destination address of the correspondent node,  
the session being a quality of service session between the correspondent node and  
the mobile node.

17. **(Original)** The system of claim 16, wherein the proxy device is located in  
the mobile.

18. **(Original)** The system of claim 16, wherein the proxy device is located  
outside the mobile node and coupled to the mobile node.

19. **(Previously Presented)** The system of claim 16, wherein;  
the quality of service session is an RSVP session;  
modified reply message is a Reservation message.

20. **(Previously Presented)** The system of claim 16, the system being a mobile  
IP environment.

21. **(Previously Presented)** The method of claim 1 wherein the step of generating the modified reply message comprises:

generating a reply message having a source address of the mobile node's home address and a destination address of the correspondent node; and

replacing the source address with the mobile node's care-of-address, thereby generating the modified reply message.

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**ix) Evidence appendix**

None.



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**x) Related proceedings appendix**

None.